

FIRST REPORT OF *CASTILLEJA ORNATA* (SCROPHULARIACEAE) FROM THE UNITED STATES

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ABSTRACT

A collection reported from the United States in southern New Mexico by the author has been identified as *Castilleja ornata* Eastwood. The species was previously known only from México in the states of Chihuahua and Durango. Tentative taxonomic relationships to *Castilleja glandulosa*, *C. palmeri*, *C. pediaca*, *C. macrostigma*, and *C. sphaerostigma* are discussed. A category of rarity status has been proposed for the species due to the alteration of its grassland habitat and infrequency of collections.

KEY WORDS: Scrophulariaceae, *Castilleja*, New Mexico, México, range extension

General collecting activities in extreme southwestern New Mexico on the Gray Ranch, a preserve owned by the Animas Foundation and managed in cooperation with the Nature Conservancy, produced a number of interesting collections, among them the following first record for the United States:

UNITED STATES. New Mexico: Hidalgo Co., ca. 60 km S of Animas, ca. 100 m N of the old Fitzpatrick's ranch house, T33S R20W, sect. 27, NE $\frac{1}{4}$ of SW $\frac{1}{4}$, elev. 1570 m. plants scattered in level clay loam with *Sporobolus airoides* and *Ambrosia psilostachya*, growth habit erect, bracts and flowers yellowish-green, 20 August 1993, L. McIntosh 2805 (NMC). Det. by Dr. Guy L. Nesom.

Castilleja ornata Eastwood is a species previously known only from the western portions of the Mexican states of Chihuahua and possibly Durango. The inflorescence of this annual plant is usually yellow, though a few plants with pale red bracts are found in herbaria (Mark Egger, pers. comm., 1994).

Collections have been recorded from this region in 1887, 1899, 1906, 1908, 1936, 1960, 1985, and 1993. Judging from the few collections present in herbaria, this species is seldom collected, and its distribution and frequency in the field is not completely known. The United States record represents an approximately 140 km range extension from the closest known station in Mexico (Figure 1).

According to Eastwood, *Castilleja glandulosa* Greenman is the closest relative of *C. ornata* (1909). *Castilleja glandulosa* is reduced to synonymy under *Castilleja scorzoneraefolia* Kunth by Nesom (1992). The southernmost known collection of *C. ornata*, from Otinapa, Durango, was originally identified as *Castilleja palmeri* Eastwood, which T.I. Chuang (pers. comm. 1994) is tentatively reducing to a synonym of *C. ornata*. Chuang states in the same communication that he is also reducing *Castilleja pediaca* Eastwood to a synonym of *C. ornata* and placing these, along with *Castilleja macrostigma* Robinson and *Castilleja sphaerostigma* Eastwood, into a closely related group, which he tentatively refers to as the "*Castilleja macrostigma* complex". The species relationships within this complex have yet to be clarified, and much additional field work in México will be necessary to properly resolve their taxonomy. All of these taxa are members of sect. *Euchroma* (Nutt.) Benth. (*sensu* Eastwood 1909).

The little habitat information available suggests that *Castilleja ornata* grows in relatively level grasslands. Until recently the western parts of Chihuahua and Durango have been comparatively difficult to access. Roads were dirt until ca. 10-20 years ago. This region is not near any major collecting university, and has not been part of an area under intensive consideration for a flora (as compared to, say, the Chihuahuan Desert). Finally, the grasslands in the area have had several centuries of extremely heavy use and are among the most severely altered and perhaps endangered habitats in the Southwest, second only to riparian areas. Due to these factors, population numbers, viability, and stability in México cannot be determined.

The U.S. site has had a reduction in grazing use for the past three years (Ben Brown, pers. comm. 1994), and the abundance of the weedy *Ambrosia psilostachya* DC. mixed with *Sporobolus airoides* (Torr.) Torr. indicates a seral stage of succession. During a site visit on April 18, 1994, additional standing dead plants from the previous growing season were found in a less weedy area with more *Sporobolus airoides* about 150 to 200 meters east of the original collection site. These plants were concentrated on the fringes of a colony of *Juncus balticus* Willd., which was mixed with *S. airoides*. This area appeared to be less disturbed by previous and current livestock grazing than the original collection site, and the *C. ornata* plants were denser and more numerous. As these plant communities continue to change, the persistence of the *C. ornata* population cannot be predicted. The species has been nominated tentatively as a candidate for Federal listing as threatened or endangered, pending further information on the number of individuals and populations, and the types, if

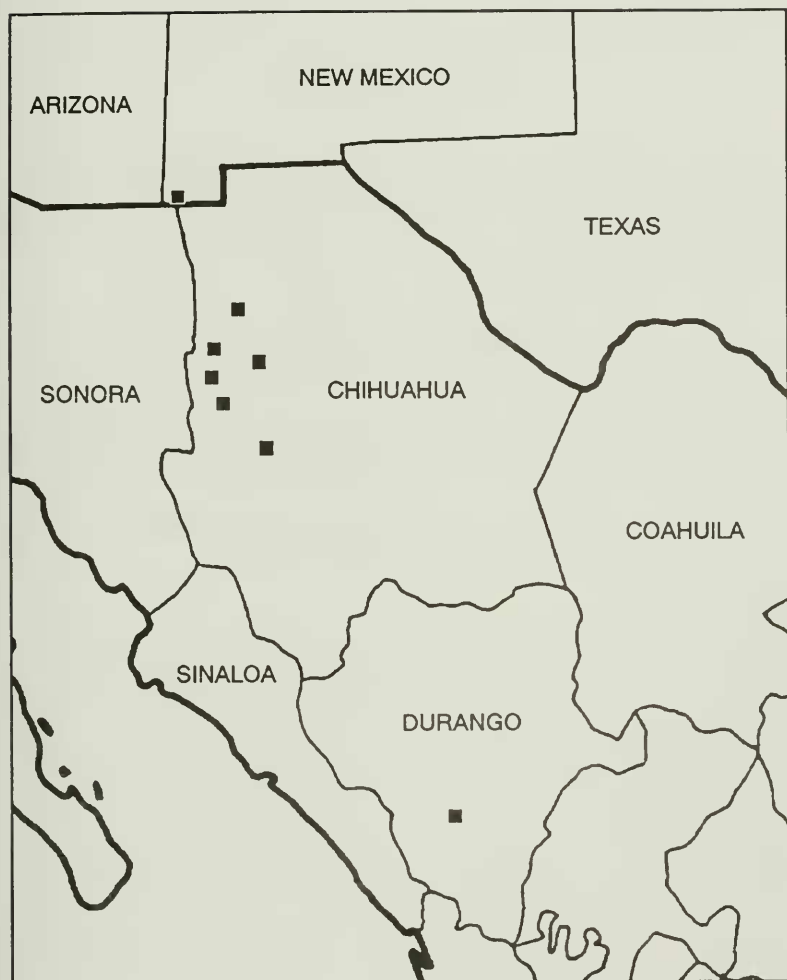


Figure 1. Known distribution of *Castilleja ornata* in northwestern México and the southwestern United States. The new United States record is approximately 140 km N of previously known stations.

any, of natural or man-made threats to the species' survival.

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